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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,349	02/11/2002	Mark D. Rowan	P 1030.11004	5695
7590 03/02/2004			EXAMINER	
Garth Janke BIRDWELL, JANKE & DURANDO, PLC Suite 1400 1100 SW Sixth Avenue Portland, OR 97204			KINDER, DARRELL D	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,349

Applicant(s)

ROWAN, MARK D.

Examiner

Darrell Kinder

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/6/2002, 8/15/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because the drawings are informal and useful for examination purposes only. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: page 7 lines 5-6 it appears that the designations of "right" and "left" for "positive" and "negative" are switched in comparison to Figure 1; page 13 line 11 replace "are" with --is--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent no. 4,942,360 ("Candy '360").

Referring to claim 1, Candy '360 discloses a method for distinguishing between metal objects, comprising the steps of: interrogating a target with at least two

frequencies (col. 1 lines 25-27); receiving respective electrical response signals from said target for at least said two frequencies (col. 1 lines 27-30), resolving said response signals into respective portions that are at least primarily resistive (col. 1 lines 30-40, 49-52); comparing the magnitudes of at least two of said portions (col. 1 lines 30-34); selecting one response signal from among said response signals based on the results of said step of comparing (col. 8 line 68 - col. 9 line 3); and characterizing said target by use of said one response signal (col. 1 lines 33-40).

4. Regarding claims 2 and 3, Candy '360 discloses a method wherein said step of selecting selects said one response signal based on whether the respective portion of said one response signal is larger in magnitude than the respective said portion of another or all other of said response signals (col. 8 line 68 - col. 9 line 3).

5. Regarding claim 4, Candy '360 discloses an apparatus for distinguishing between metal objects, comprising: an interrogating circuit adapted to interrogate a target with at least two frequencies (col. 1 lines 25-27); a receiving circuit (**Fig. IV 44**) adapted to receive respective electrical response signals from said target for at least two frequencies (col. 1 lines 27-30); a demodulating circuit (48-53) for resolving said response signals into respective portions that are at least primarily resistive (col. 1 lines 30-40, 49-52); a comparing circuit (62) for comparing the magnitudes of said portions (col. 1 lines 30-34); and a selecting circuit (62) for selecting one response signal from among said response signals based on comparison (col. 8 line 68 - col. 9 line 3).

6. Referring to claim 5, Candy '360 discloses an apparatus further comprising a look-up table for characterizing said target with said response signal (col. 12 lines 61-64; col. 17 lines 10-27).

7. Regarding claim 6, Candy '360 discloses an apparatus wherein said demodulator circuit includes at least two synchronous demodulators (**Fig. III 36-37**) associated respectively with said first and second frequencies (col. 8 lines 13-40).

8. Referring to claim 7, Candy '360 discloses an apparatus wherein said demodulator circuit includes at least four synchronous demodulators (**Fig. IV 48-53**) associated respectively with the resistive and reactive components for each of said first and second frequencies (col. 8 lines 53-62).

9. Claims 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent no. 5,642,050 ("Shoemaker").

Regarding claim 12, Shoemaker discloses a method for correlating one or more of a metal detector's response signals to reference data that relates a plurality of metal targets to selected signal characteristics, the method comprising the steps of: interrogating the metal target with an electromagnetic signal at a first frequency to obtain a corresponding response signal (col. 3 lines 3-5); identifying in said response signal a selected signal characteristic (col. 3 lines 7-11); normalizing the identified said signal characteristic with respect to said reference data (col. 8 line 1 - col. 9 line 20; col. 10 line 64-66); and comparing the normalized said signal characteristic with the signal characteristics of said reference data to identify the metal target (col. 10 line 66 - col. 11 line 12).

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10. Referring to claim 13, Shoemaker discloses a method wherein said signal characteristic is a phase delay between the interrogating signal and said response signal (using phase detectors col. 4 lines 34-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Candy '360 in view of U.S. Patent no. 4,237,419 ("Törnblom").

Regarding claim 8, Candy '360 discloses a method for distinguishing between metal objects, comprising the steps of: interrogating an actual target with one or more electromagnetic signals at at least first and second frequencies (col. 1 lines 25-27); receiving respective first and second electrical response signals from said target associated with said first and second frequencies (col. 1 lines 27-30); obtaining first data from said first electrical response signal data (col. 8 lines 47-62); and comparing said

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data corresponding to said first response signal to data corresponding to said second response signal (col. 8 line 68 - col. 9 line 3); and providing a signal responsive to the results of said step of comparing (col. 1 lines 33-40).

Candy '360 does not disclose normalizing said first data with respect to predetermined reference data at a third frequency.

Törnblom teaches normalizing the data from a first frequency using a predetermined reference at a third frequency (col. 4 lines 49-68).

One of ordinary skill in the art would have looked to Törnblom to modify Candy '360, as it is analogous art. Furthermore, one of ordinary skill in the art would have been motivated to modify the method of Candy '360 with the teaching of Törnblom such that the first data was normalized with respect to reference data at a third frequency as it would provide more accurate results and detection of a desired metal.

12. Referring to claim 9, Candy '360 discloses a method wherein three frequencies can be used (col. 8 lines 40-45), and further wherein the third frequency can be equal to the second frequency (col. 8 line 57). This could be applied in combination to the Törnblom teaching such that the third frequency used in normalization is equal to the second frequency, as it would allow the data from the respective frequencies to be compared at a level that is equivalent, and thus providing more accurate results.

13. Referring to claim 10, Candy '360 discloses comparing the data corresponding to the first response signal with the data corresponding to the second response signal (col. 8 line 68 - col. 9 line 3).

Törnblom discloses that the third frequency is not equal to the second frequency (col. 4 line 59), and that the second response signal is normalized with respect to predetermined reference data (col. 4 lines 53-68).

Thus the combination of Candy '360 with the teaching of Törnblom would disclose a method comprising the elements of claim 10.

14. Regarding claim 11, Candy '360 discloses a method further comprising providing an output audio representative of the magnitude of at least one of said first and second response signals (col. 10 lines 41-42). Candy '360 does not explicitly disclose that the audio output is decreased as a function of the signal, but does disclose that the output is used to control the audio output (col. 6 lines 54-55). It goes to reason that an output that decreases would also produce an audio output that is decreasing. One of ordinary skill in the art would have been motivated to modify the combination of Candy '360-Törnblom such that the audio output decreases as a function of the output signal, specifically that it decreases as the output signal decreases, as it would provide means of alerting the operator that an object detected is not likely an object of interest. See *In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ 2d 1693, 1697; *In re Ahlert*, 424 F.2d at 1092, 165 USPQ at 421 (when certain limitations in a claim are old and well known, the Examiner can take official notice to "fill in the gaps" to support a particular ground of rejection).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Trump U.S. Patent no. 4,321,539; Payne U.S. Patent no. 4,507,612; Candy U.S. Patent no. 4,890,064; Earle U.S. Patent no. 6,421,621.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darrell Kinder whose telephone number is 571- 272-2264. The examiner can normally be reached on Monday-Friday 7:00-4:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 571-272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dk



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